

Amendments:

In the Claims:

1-8. (cancelled)

9. (Previously Amended) A method of producing semiconductor devices by cobalt silicide technology with titanium nitride film as the cap film, comprising:

removing a first portion of said titanium nitride film which is arranged over underlying cobalt silicide film by a first removal step using an ammonia-hydrogen peroxide-water mixture such that a second portion of said titanium nitride film remains covering said cobalt silicide film; and

removing said second portion of said titanium nitride film on said cobalt silicide film by a second removal step using a hydrogen peroxide-water mixture so as to expose a surface of the cobalt silicide film without etching thereof.

10. (Original) A method of producing semiconductor devices according to Claim 9, wherein the concentration of said ammonia-hydrogen peroxide-water mixture is within a range of 1 to 30 vol% hydrogen peroxide in terms of water and within a range of 1 to 30 vol% ammonia in terms of water and the concentration of said hydrogen peroxide-water mixture is within a range of 1 to 30 vol% hydrogen peroxide in terms of water.

11. (Original) A method of producing semiconductor devices according to Claim

10, wherein the concentration of said ammonia-hydrogen peroxide-water mixture is within a range of 10 to 20 vol% hydrogen peroxide in terms of water and within a range of 5 to 20 vol% ammonia in terms of water and the concentration of said hydrogen peroxide-water mixture is within a range of 1 to 30 vol% hydrogen peroxide in terms of water.

12. (Previously Amended) A method of producing semiconductor devices, comprising:

forming cobalt film on the top surface of a silicon substrate, which has a gate electrode and a diffusion film;

forming titanium nitride film as the cap film on the top surface of said cobalt film;

selectively reacting the silicon of said silicon substrate and the cobalt of said cobalt film;

removing a first portion of said titanium nitride film which is arranged over underlying cobalt silicide film by a first removal step using an ammonia-hydrogen-peroxide-water mixture such that a second portion of said titanium nitride film remains covering said cobalt silicide film; and

removing said second portion of said titanium nitride film remaining on said cobalt silicide film by a second removal step using a hydrogen peroxide-water mixture so as to expose a surface of said cobalt silicide film without etching thereof.

13. (Previously Amended) A method of producing semiconductor devices by

cobalt silicide technology with titanium film as the cap film, comprising:

removing a first portion of said titanium film which is arranged over underlying cobalt silicide film by a first removal step using an ammonia-hydrogen peroxide-water mixture such that a second portion of said titanium nitride film remains covering said cobalt silicide film; and

removing said second portion of said titanium film remaining on said cobalt silicide film by a second removal step using a hydrogen peroxide-water mixture so as to expose a surface of said cobalt silicide film without etching thereof.

14. (Original) A method of producing semiconductor devices according to Claim 13, wherein the concentration of said ammonia-hydrogen peroxide-water mixture is within a range of 1 to 30 vol% hydrogen peroxide in terms of water and within a range of 1 to 30 vol% ammonia in terms of water and the concentration of said hydrogen peroxide-water mixture is within a range of 1 to 30 vol% hydrogen peroxide in terms of water.

15. (Original) A method of producing semiconductor devices according to Claim 14, wherein the concentration of said ammonia-hydrogen peroxide-water mixture is within a range of 10 to 20 vol% hydrogen peroxide in terms of water and 5 to 20 vol% ammonia in terms of water and the concentration of said hydrogen peroxide-water mixture is within a range of 1 to 30 vol% in terms of water.

16. (Previously Amended) A method of producing semiconductor devices, comprising:

forming cobalt film on the top surface of a silicon substrate, which has a gate electrode and a diffusion layer;

forming titanium film as the cap film on the top surface of said cobalt film;

selectively reacting the silicon of said silicon substrate and the cobalt of said cobalt film;

removing a first portion of said titanium film which is arranged over underlying cobalt silicide film by a first removal step using an ammonia-hydrogen peroxide-water-mixture such that a second portion of said titanium film remains covering said cobalt silicide film, and

removing said second portion of said titanium film remaining on said cobalt silicide film by a second removal step using a hydrogen peroxide-water mixture so as to expose a surface of said cobalt silicide film without etching thereof.

17-18. (cancelled)